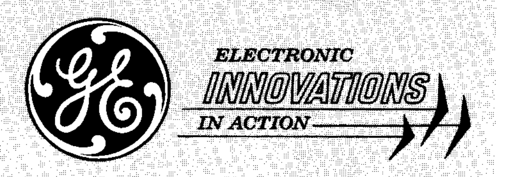


—PRODUCT INFORMATION—

6AH9

Compactron Triode-Pentode

- COLOR TV TYPE
- MULTI-FUNCTION
- FRAME-GRID VIDEO PENTODE
- 21000 MICROMHOS
- 10 WATTS PLATE DISSIPATION
- MEDIUM-MU TRIODE

The 6AH9 is a compactron containing a medium-mu triode and a sharp-cutoff, frame-grid pentode. The pentode is designed primarily for video amplifier service and the triode for color blanker or general purpose applications in color television receivers

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC* . . . . 6.3 ± 0.6 Volts
Heater Current• . . . . 0.9 Amperes
Direct Interelectrode Capacitances♦

Pentode Section

Grid-Number 1 to Plate: (Pg1 to Pp) . . . . 0.15 pf
Input: Pg1 to (h + Pk + Pg2 + Pg3 + i.s.) . . . . 15 pf
Output: Pp to (h + Pk + Pg2 + Pg3 + i.s.) . . . . 6.0 pf

Triode Section

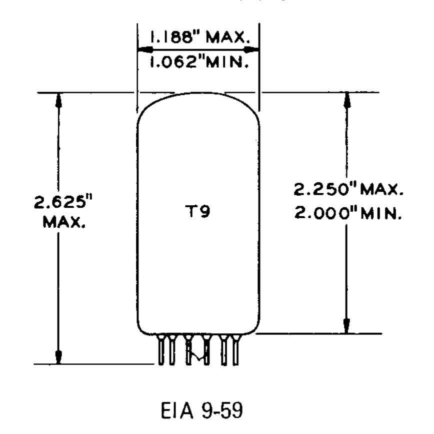
Grid to Plate: (Tg to Tp) . . . . 3.7 pf
Input: Tg to (h + Tk) . . . . 2.4 pf
Output: Tp to (h + Tk) . . . . 0.4 pf

MECHANICAL

Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-59

Maximum Diameter . . . . 1.188 Inches
Minimum Diameter . . . . 1.062 Inches
Maximum Over-all Length . . . . 2.625 Inches
Maximum Seated Height . . . . 2.250 Inches
Minimum Seated Height . . . . 2.000 Inches

PHYSICAL DIMENSIONS

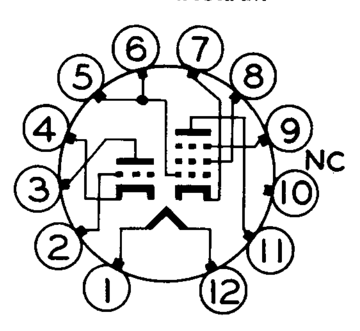


EIA 9-59

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Triode Grid
Pin 3 - Triode Plate
Pin 4 - Triode Cathode
Pin 5 - Pentode Grid Number 1
Pin 6 - Pentode Grid Number 1
Pin 7 - Pentode Cathode
Pin 8 - Pentode Grid Number 2 (Screen)
Pin 9 - Pentode Grid Number 3 (Suppressor) and Internal Shield
Pin 10 - No Connection
Pin 11 - Pentode Plate
Pin 12 - Heater

BASING DIAGRAM



EIA 12HJ



Supersedes 6AH9 PI Sheet dated 10-68

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage	400	330	Volts
Suppressor Voltage	0	---	Volts
Screen Supply Voltage	330	---	Volts
Screen Voltage - See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage	0▲	0	Volts
Plate Dissipation	10	2.0	Watts
Screen Dissipation	1.0	---	Watts
Heater-Cathode Voltage			
Heater Positive with respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with respect to Cathode			
Total DC and Peak	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.1	1.0	Megohms
With Cathode Bias	0.25	---	Megohms

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

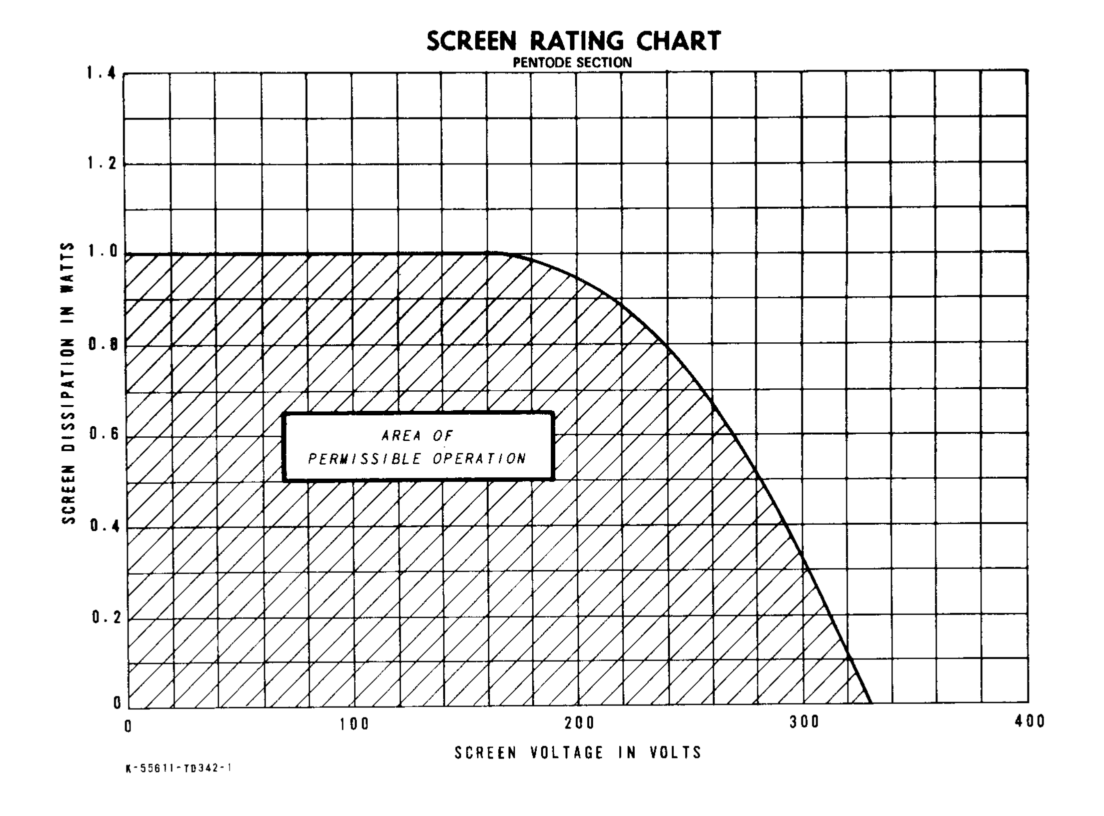
CHARACTERISTICS AND TYPICAL OPERATION

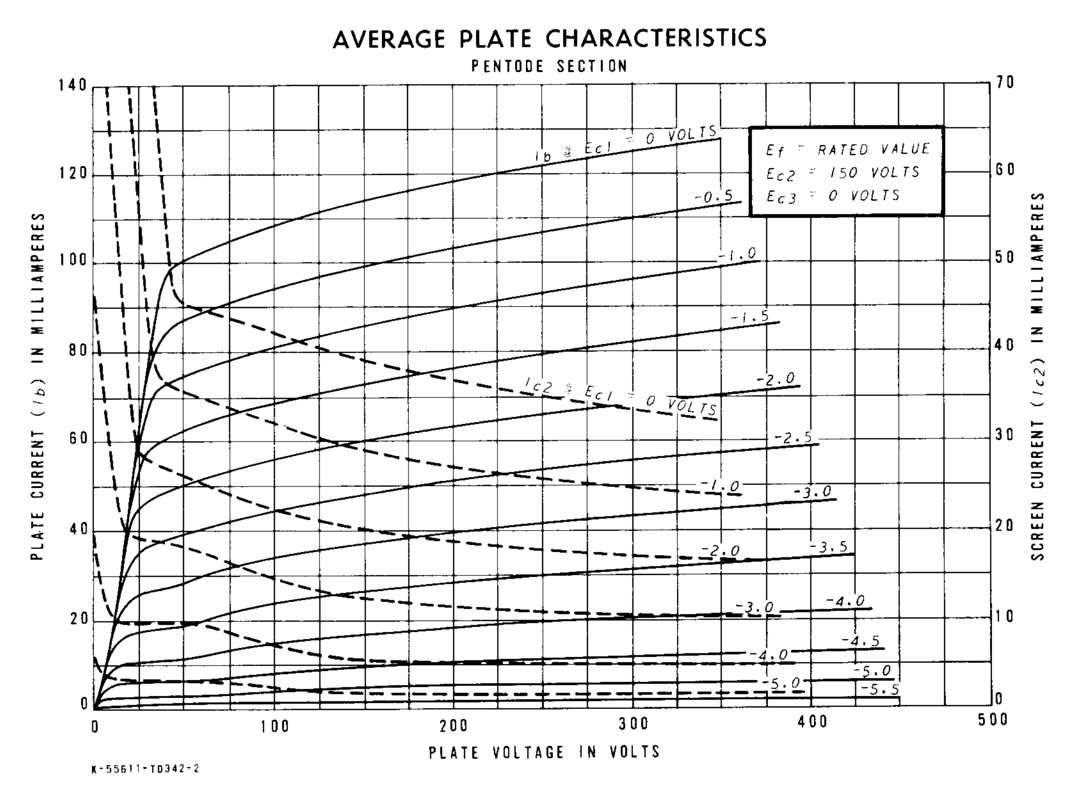
AVERAGE CHARACTERISTICS

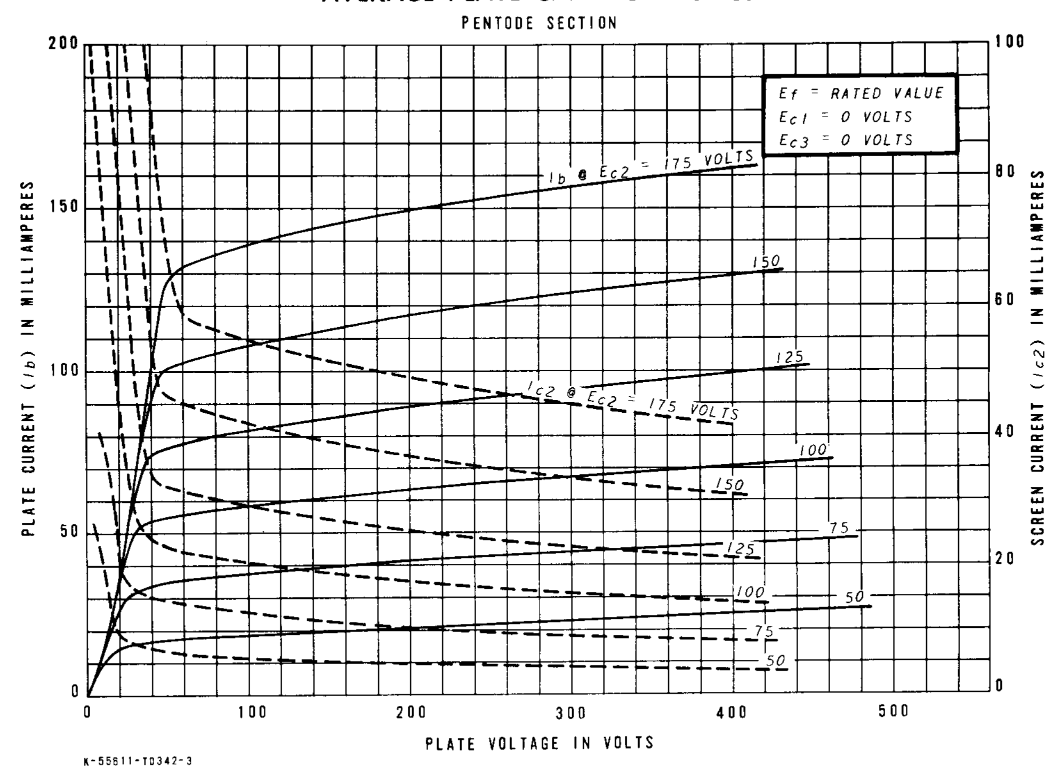
	Pentode Section		Triode Section	
Plate Voltage	50	250	250	Volts
Screen Voltage	125	150	---	Volts
Grid-Number 1 Voltage	0§	0	-9.0	Volts
Cathode-Bias Resistor	---	122	---	Ohms
Amplification Factor	---	---	20	
Plate Resistance, approximate	---	55000	7500	Ohms
Transconductance	---	21000	2750	Micromhos
Plate Current	76	25	8.0	Milliamperes
Screen Current	32	6.0	---	Milliamperes
Grid-Number 1 Voltage, approximate				
Ib = 100 Microamperes	---	-7.2	-18	Volts

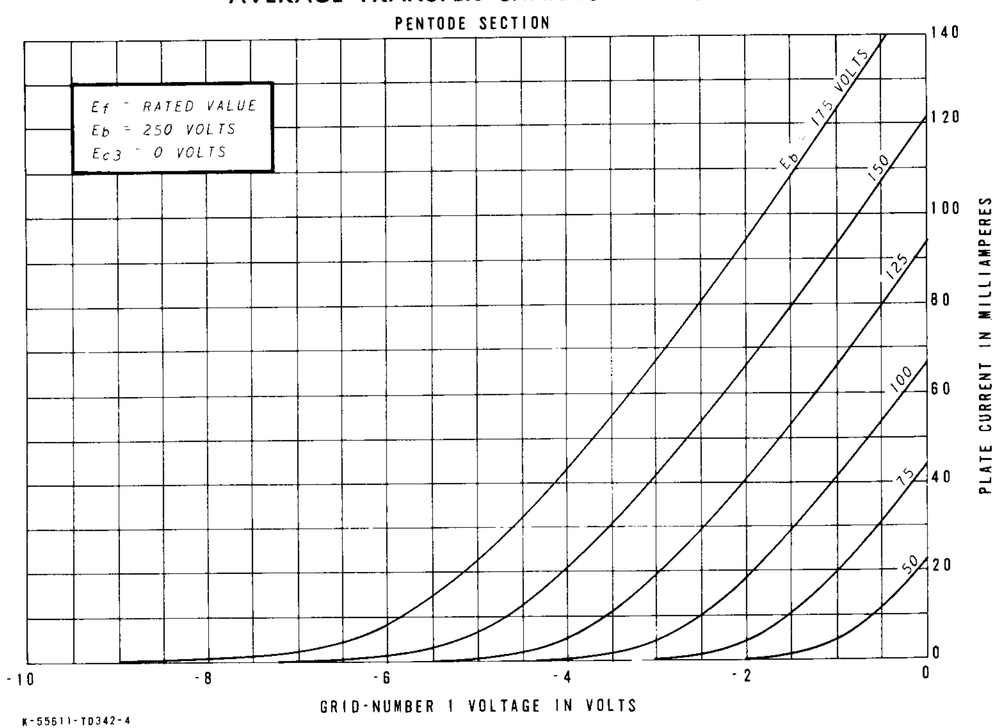
NOTES

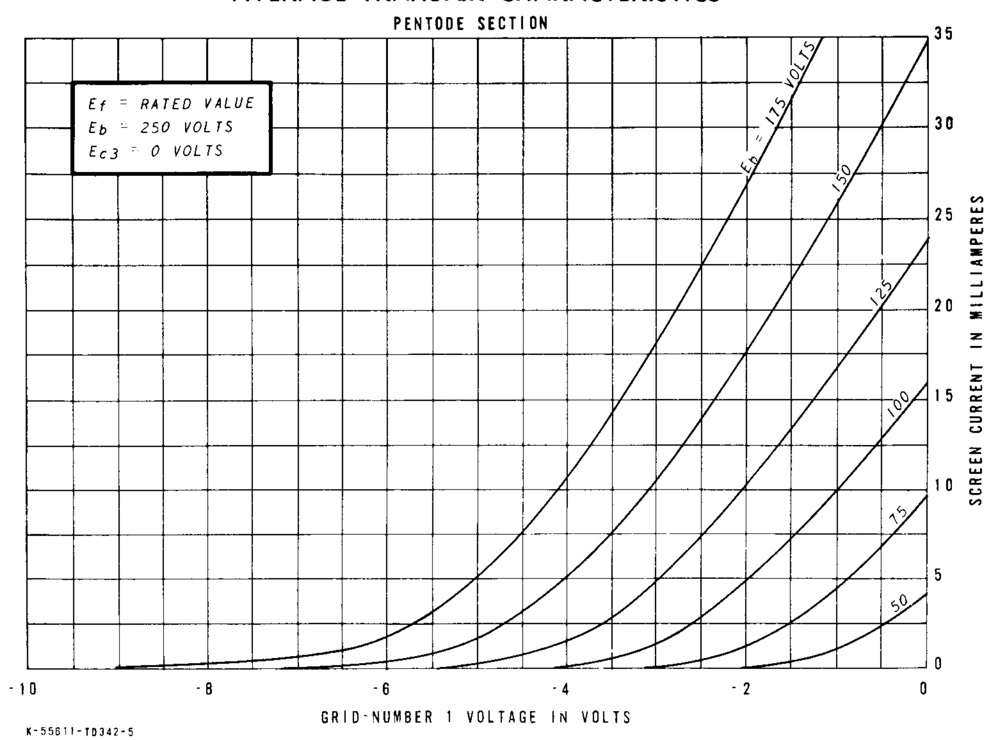
* ★ The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
* ● Heater current of a bogey tube at Ef = 6.3 volts.
* ♦ Without external shield.
* ▲ Control grid to cathode spacing of the pentode section of this tube is of such low order of magnitude as to preclude the use of voltage between these elements of more than 50 volts dc or peak ac in commercial tube checkers and shorts-indicating devices, particularly where mechanical excitation of the tube is employed.
* § Applied for short interval (two seconds maximum) so as not to damage tube.

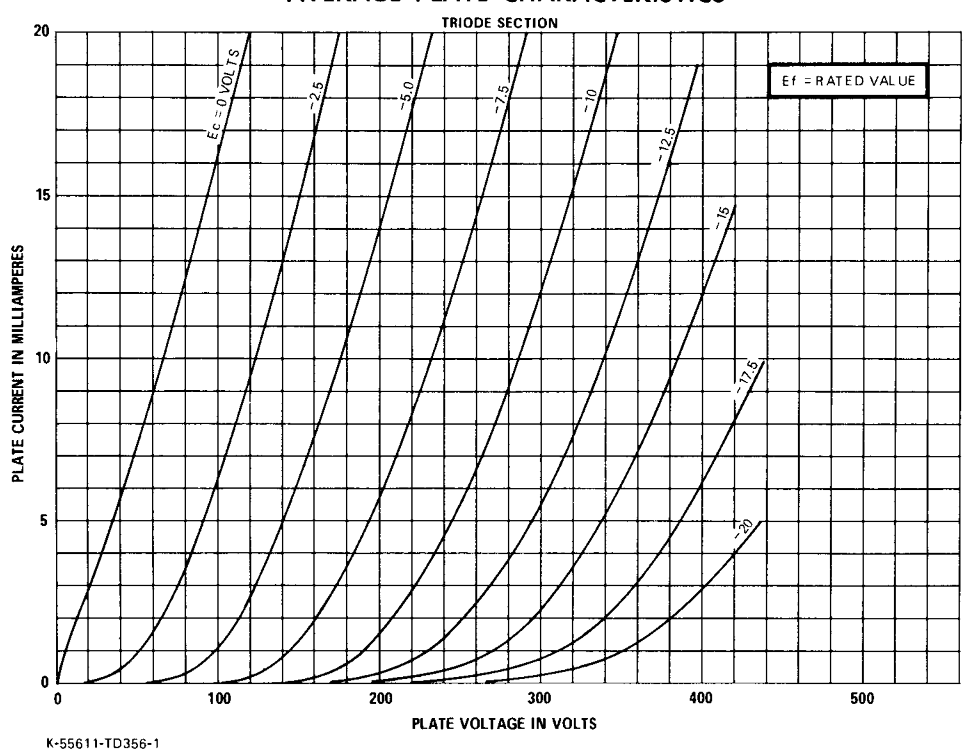

SCREEN RATING CHART
PENTODE SECTION
SCREEN DISSIPATION IN WATTS
SCREEN VOLTAGE IN VOLTS
AREA OF
PERMISSIBLE OPERATION
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
100
200
300
400
K-55611-TD342-1

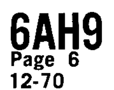

AVERAGE PLATE CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Ec2 = 150 VOLTS
Ec3 = 0 VOLTS
Ib @ Ec1 = 0 VOLTS
Ic2 @ Ec1 = 0 VOLTS
PLATE CURRENT (Ib) IN MILLIAMPERES
SCREEN CURRENT (Ic2) IN MILLIAMPERES
PLATE VOLTAGE IN VOLTS
K-55611-TD342-2

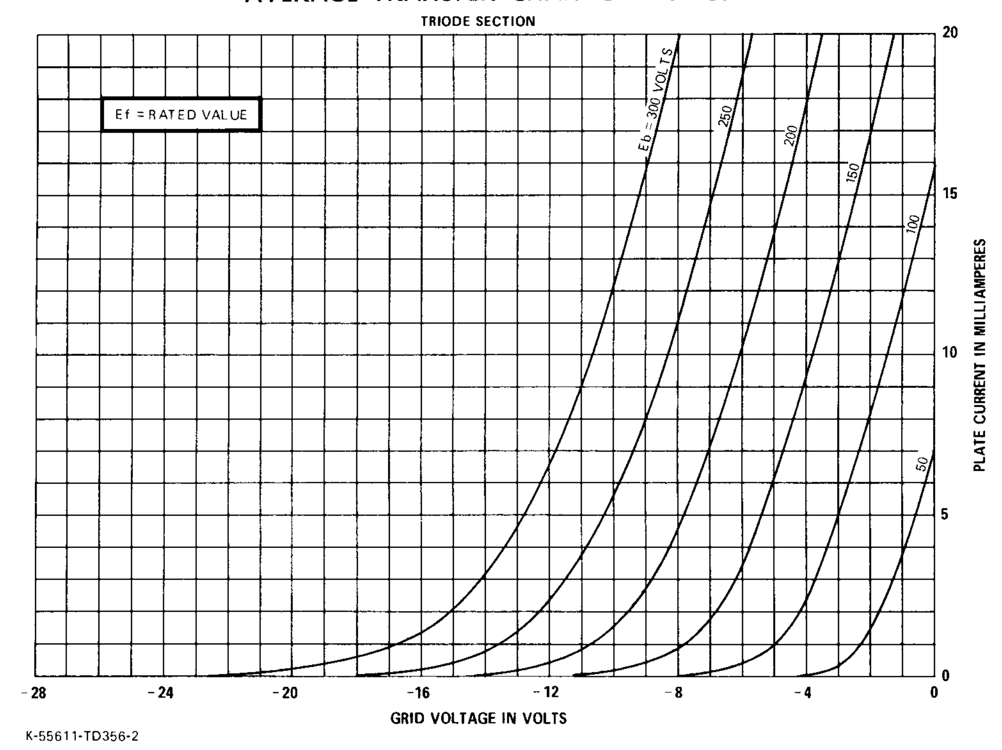

AVERAGE PLATE CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Ec1 = 0 VOLTS
Ec3 = 0 VOLTS
Ib @ Ec2 = 175 VOLTS
150
125
100
75
50
Ic2 @ Ec2 = 175 VOLTS
150
125
100
75
50
PLATE CURRENT (Ib) IN MILLIAMPERES
SCREEN CURRENT (Ic2) IN MILLIAMPERES
PLATE VOLTAGE IN VOLTS
0
100
200
300
400
500
0
50
100
150
200
0
20
40
60
80
100
K-55611-TD342-3

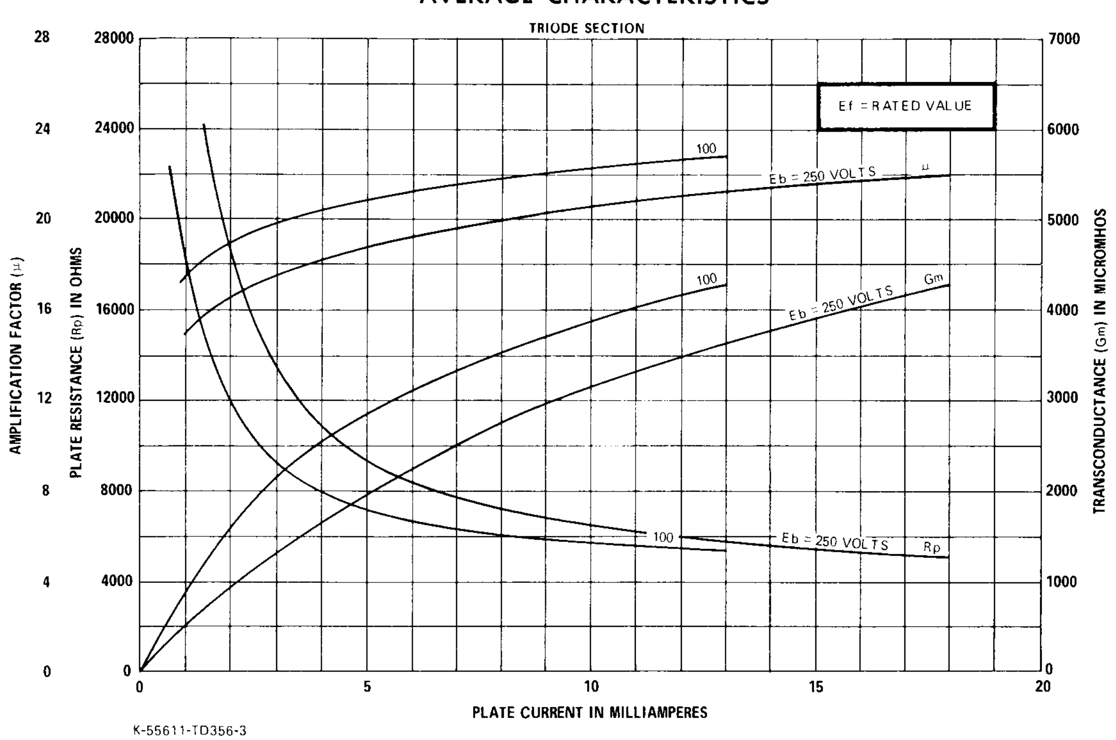

AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Eb = 250 VOLTS
Ec3 = 0 VOLTS
Eb = 175 VOLTS
150
125
100
75
50
PLATE CURRENT IN MILLIAMPERES
GRID-NUMBER 1 VOLTAGE IN VOLTS
-10
-8
-6
-4
-2
0
0
20
40
60
80
100
120
140
K-55611-TD342-4


AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION
Ef = RATED VALUE
Eb = 250 VOLTS
Ec3 = 0 VOLTS
Eb = 175 VOLTS
150
125
100
75
50
35
30
25
20
15
10
5
0
SCREEN CURRENT IN MILLIAMPERES
-10
-8
-6
-4
-2
0
GRID-NUMBER 1 VOLTAGE IN VOLTS
K-55611-TD342-5


AVERAGE PLATE CHARACTERISTICS
TRIODE SECTION
Ef = RATED VALUE
Ec = 0 VOLTS
-2.5
-5.0
-7.5
-10
-12.5
-15
-17.5
-20
20
15
10
5
0
PLATE CURRENT IN MILLIAMPERES
0
100
200
300
400
500
PLATE VOLTAGE IN VOLTS
K-55611-TD356-1







TUBE PRODUCTS DEPARTMENT



Owensboro, Kentucky 42301